

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Currently Amended) A process of preparing hydrogen through thermochemical decomposition of water, wherein coal powders are caused to react with water in the presence of CaO under a condition of a temperature in a range of 600°C to 800°C, substantially without an oxidizing agent added thereto, thereby reducing water to form hydrogen, said process comprising the steps of rendering the coal powders and CaO into impalpable powders to form mixed impalpable powders, feeding steam generated from a steam generator and the mixed impalpable powders to a fluidized bed of a main reactor, and implementing thermochemical decomposition of water in the main reactor by causing the mixed impalpable powders of the coal powders and CaO to undergo grain growth in the fluidized bed while adjusting ~~at~~the steam partial pressure in the main reactor so as to ~~be suited for a condition enabling~~ enable CaO to form Ca(OH)₂.

2. (Currently Amended) A process of preparing hydrogen through thermochemical decomposition of water according to claim 1, wherein the steam partial pressure in the fluidized bed is ~~at~~not less than 3 atm at 600°C and ~~is~~~~at~~not less than 40 atm at 800°C.

3. (Currently Amended) A process of preparing hydrogen through thermochemical decomposition of water according to claim 1, wherein the grain size of the mixed impalpable powders is in a range of 0.005 to 0.05 mm, and the grain size after the grain growth is in a range of 0.05 to 0.35 mm.

4. (Previously Amended) A process of preparing hydrogen through thermochemical decomposition of water according to claim 1, wherein the main reactor is a fluidized bed reactor, and the outer wall of the main reactor is cooled to not higher than 600°C.

5. (Previously Presented) A process of preparing hydrogen through thermochemical decomposition of water according to claim 2, wherein the main reactor is a fluidized bed reactor, and the outer wall of the main reactor is cooled to not higher than 600°C.

6. (Previously Presented) A process of preparing hydrogen through thermochemical decomposition of water according to claim 3, wherein the main reactor is a fluidized bed reactor, and the outer wall of the main reactor is cooled to not higher than 600°C.